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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,812	02/27/2002	Piotr Indyk	2000-0352	6214

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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,812

Applicant(s)

INDYK ET AL.

Examiner

Etienne P LeRoux

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11, 25, 26, 31, 32 and 38 is/are rejected.
- 7) ☐ Claim(s) 6-10, 12-24, 27-30, 33-37, 39 and 40 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) °
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/27/2002.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Claim Objections

Claims 6-10, 12-24, 27-30, 33-37, 39 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Claims 6 and 33: calculating a dot product between each of the generated vectors and each of the random normalized vectors to produce a lower dimensional vector

Claims 7-9 and 34-36: calculating a polynomial convolution between each of the generated vectors and each of the random normalized vectors to produce a lower dimensional vector

Claims 10 and 37: identifying a dimension of the selected generated vector as a relaxed period.

Claims 12-14, 23, 24, 27-30, 39 and 40: adding each first lower dimensional vector and the corresponding second lower dimensional vector to produce third lower dimensional vectors.

Claims 15-22: the claimed methods steps following the condition that a lowest summed distance exceeds a predetermined threshold.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was

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commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 11, 25, 26, 31, 32 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 6,665,790 issued to Glossner et al (hereafter Glossner) in view of US Pat No 6,567,709 issued to Malm et al (hereafter Malm), and further in view of US Pat No 6,023,673 issued to Bakis et al (hereafter Bakis).

Claims 1, 25 and 31:

Glossner discloses generating vectors [vector data file per Fig 4, 203, col 8, lines 7-27] from a plurality of partitions of the data set

Glossner discloses the above elements but fails to disclose reducing each generated vector to a lower dimensional vector.

Malm discloses reducing each generated vector to a lower dimensional vector [col 15, lines 30-50, in particular reduction of numerical information].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Glossner to include reducing each generated vector to a lower dimensional vector as taught by Malm.

The ordinarily skilled artisan would have been motivated to modify Glossner per the above for the purpose of extracting numerical information that relates to the performance of the machine or to a specific condition [Malm, col 15, lines 34-38].

The combination of Glossner and Malm discloses the elements of claim 1 as noted above.

The combination of Glossner and Malm fails to disclose for each lower dimensional vector, summing distances between the lower dimensional vector and remaining lower dimensional vectors; and selecting the generated vector corresponding to the lower dimensional vector having a lowest summed distance as representative of the data set.

Bakis discloses for each lower dimensional vector, summing distances between the lower dimensional vector and remaining lower dimensional vectors; and selecting the generated vector corresponding to the lower dimensional vector having a lowest summed distance as representative of the data set [col 1, lines 33-50, in particular, prototype vector signals having the smallest distance].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Glossner and Malm to include for each lower dimensional vector, summing distances between the lower dimensional vector and remaining lower dimensional vectors; and selecting the generated vector corresponding to the lower dimensional vector having a lowest summed distance as representative of the data set. as taught by Bakis.

The ordinarily skilled artisan would have been motivated to modify the combination of Glossner and Malm per the above for the purpose of selecting a vector signal which has the highest likelihood of yielding the feature vector signal, Bakis, col 1, lines 43-50].

Claims 2, 26 and 32:

The combination of Glossner, Malm and Bakis disclose the elements of claim 1 as noted above.

Glossner discloses outputting the generated vector as the representative of the data set [Fig 1, 109].

Claim 3:

The combination of Glossner, Malm and Bakis disclose the elements of claims 1 and 2 as noted above.

Glossner fails to disclose outputting the generated vector to a graphical display.

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Malm discloses outputting the generated vector to a graphical display [Fig 1, 3 and col 4, lines 66-67].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Glossner to include outputting the generated vector to a graphical display as taught by Malm.

The ordinarily skilled artisan would have been motivated to modify Glossner per the above for the purpose of providing information for managing the machinery asset [Malm, col 4, lines 66-67].

Claim 4:

The combination of Glossner, Malm and Bakis disclose the elements of claims 1 and 2 as noted above.

Glossner discloses outputting the generated vector to a storage device [col 4, lines 30-35].

Claims 11 and 38:

The combination of Glossner, Malm and Bakis disclose the elements of claim 1 as noted above.

Malm discloses wherein the selecting comprises: identifying the selected generated vector as an average trend [col 15, lines 30-50].

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Glossner, Malm and Bakis and further in view of US Pat No 5,904,727 issued to Prabhakaran (hereafter Prabhakaran).

Claim 5:

The combination of Glossner, Malm and Bakis disclose the elements of claims 1 and 2 as noted above.

The combination of Glossner, Malm and Bakis fails to disclose outputting the generated vector to a transmitter.

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Prabhakaran discloses outputting the generated vector to a transmitter [abstract].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Glossner, Malm and Bakis to include outputting the generated vector to a transmitter as taught by Prabhakaran.

The ordinarily skilled artisan would have been motivated to modify the combination of Glossner, Malm and Bakis per the above for the purpose of dynamically managing a fleet of mobile vehicles, for example, re-assigning jobs, re-routing vehicles and adding jobs [Prabhakaran, col 1, lines 64-67].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux whose telephone number is (703) 305-0620. The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (703) 308-1436.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Patent related correspondence can be forwarded via the following FAX number (703) 872-9306

Etienne LeRoux

9/5/2004


SAFET METJAHIC
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